Sugar Maple Borer

The sugar maple borer, *Glycobius speciosus* (Say), is generally considered to be the most injurious insect pest of sugar maple. Although intermediate or codominant trees of low vigor may be preferred, vigorous trees from sapling to mature size are attacked. The frequency of attack increases with tree diameter. Trees in heavily grazed open woodlands and sugarbush areas are subject to severe borer damage.

The sugar maple is the only known host of the borer. The insect is found throughout the range of the tree—most of the Eastern United States and adjacent Canada, south into the southern Appalachian Mountains, and west to Minnesota. In its southern range the borer is more frequently found at higher elevations. It causes considerable damage to sugar maples used as shade trees.

Description and Life History

The adult is a stout black beetle, about 1 inch long, with yellow markings (fig. 1). The head is bright yellow; the thorax has two parallel yellow bands on each side, not joined at the middle; and the wing covers have five dark-yellow bands, the middle one near the base being shaped like a W. The tips of the wing covers are yellow, except for a small black spot at the center of each.

The elongate, whitish eggs are about one-eighth of an inch long. The rosy-white cylindrical larva, when fully grown, may be 2 inches long. The legs are minute and the mouth parts brownish.

Beetle activity begins late in the spring. The adults are fairly long lived, producing eggs from mid-June into August; most eggs are laid in natural cracks or crevices in the bark on the lower 30 feet of the bole or near the base of the large

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Figure 1.—Adult sugar maple borer

NOTE: Author of the original edition of this publication was the late Harvey J. MacAloney, who was principal entomologist, North Central Forest Experiment Station, which is maintained by the USDA Forest Service in cooperation with the University of Minnesota.

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limbs. After hatching, a larva bores into the cambium and constructs a meandering mine. By early fall the larva is about one-half inch long and overwinters in a shallow excavation in the sapwood.

The second year it tunnels just under the bark, longitudinally or transversely and partly around the bole or branch, but generally upward. The tunnels interrupt the translocation of food and water. As cold weather approaches, the larva bores into the wood, first obliquely in an upward direction and then parallel with the grain for several inches; at the far end of its tunnel, it constructs a pupal chamber and overwinters. The beetle emerges the next spring, thus completing a 2-year cycle.

Evidence of Infestation

New attacks may be detected by small, discolored, wet spots due to sap leakage or by frass on the bark. Later, attack is made evident externally by transverse, spiral, or longitudinal ridges on the bark (fig. 2). These ridges persist for many years. Removal of the bark will usually show a gallery or galleries on the wood surface. Often where callus tissue forms over the galleries, the bark breaks away, leaving an exposed area, which may become an entrance court for stain-causing or wood-rotting fungi (fig. 3). Damaged lumber may result.

A successful attack on a branch may cause death of the branch, premature foilage discoloration, and finally branch breakage. Stem breakage in small trees may occur at or near a point where the gallery has partly or wholly encircled the stem (fig. 4).

Control

Prevention of damage by the sugar maple borer in forest areas requires good silvicultural practice.

Figure 2.—Transverse ridges on the bark surface, indicating attack by the sugar maple borer. (Courtesy New York State University, College of Forestry at Syracuse University.)

All-aged stands should be cut selectively to remove the larger trees and maintain tree vigor and good crown cover. In cutting even-aged stands, all the large trees should be harvested, since they are subject to the most borer damage. Heavily infested trees, those with dead main branches or crown dieback, in open woodland or sugarbush areas should be removed.

Shade trees should be carefully inspected semiannually for signs of attack—wet spots or frass on the bark, or cracks in the bark. When such signs are located, the borers can be killed by squirting carbon disulfide into the holes or cracks and plugging them with putty or grafting wax. Dead or dying branches

Figure 3.—Exposed larval galleries, possible entrance courts for stain-causing or wood-rotting fungi: *A*, Open wet wounds (courtesy of Canada Department of Forestry), *B*, callus tissue formed over an old gallery (courtesy of New York State University, College of Forestry at Syracuse University).

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Figure 4.—Stem breakage caused by attack by the sugar maple borer.

should be pruned well below the area of attack and burned.

Pesticide Precautions

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key—out of the reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, when honey bees or other pollinating insects are visiting plants, or when they may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or

drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equipment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-filled dump, or crush and bury them in a level, isolated place.

Warning: Recommendations for use of pesticides are reviewed regularly. The registrations on all suggested uses of pesticides in this publication were in effect at press time. Check with your county agricultural agent, State agricultural experiment station, or local forester to determine if these recommendations are still current.

References

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